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ABSTRACT

This paper describes the Project ALERT program (Adolescent Learning Experiences in Resistance Training) which was established by the Rand Corporation to prevent smoking and drug use among seventh graders. The program is based on the social influence model of drug use initiation. Curriculum features are described including motivation to resist and resistance skills; integration of elements from the Health Belief Model, social learning theory, and the self-efficacy approach to behavior change; and helping young people counter internal as well as external pressures to use drugs. Four strategies designed to enhance the student's motivation to avoid drug use are discussed: (1) increasing the student's sense of the seriousness of drug use; (2) increasing the student's perceived susceptibility to the consequences of using drugs; (3) decreasing the perceived barriers to resistance; and (4) increasing the perceived benefits of resistance. Activities to build resistance skills are presented which incorporate principles of social learning and behavior change such as specifying proximal goals, learning through active involvement, using role models, and enhancing motivation and perceived success through reinforcement and validation. The paper concludes with a summary of the content of the Project ALERT curriculum, and a list of references. (KGB)

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DESIGNING AN EFFECTIVE PREVENTION PROGRAM: PRINCIPLES UNDERLYING THE RAND SMOKING AND DRUG PREVENTION EXPERIMENT

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November 1984

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BACKGROUND

In 1980, the Hilton Foundation asked Rand to review what was known about adolescent drug use in order to identify the most effective measures for reducing it. Our 18-month study found that past drug education programs have had little effect in deterring initial use of drugs (Polich, Ellickson, Reuter, and Kahan, 1984). They failed because the issues on which they focused--teaching young people about the long-term effects of drug use or trying to improve their self-image--were not strongly related to the circumstances and motivations surrounding drug initiation.

We found that adolescents start using drugs in response to social influences around them and because they desire to emulate behavior they view as mature, independent, and attractive to others. This finding is supported by the fact that several anti-smoking programs which teach adolescents to identify and resist social pressures to use cigarettes have had encouraging results (Botvin and Eng, 1980; Evans, et al, 1981; Flay, et al, 1983; Telch, et al, 1982).

In response to these findings, the Hilton Foundation asked Rand to design, implement, and evaluate a school-based smoking and drug prevention program based on the social influence model of drug-use initiation. The resulting program--Project ALERT (Adolescent Learning Experiences in Resistance Training)--uses methods thought to be effective in preventing cigarette use, while adapting them to the distinct beliefs and pressures surrounding initiation into other drugs.

This paper is a revised and expanded version of a presentation given at the Stanford Conference on Unhealthful Risk-Taking Behaviors among Adolescents, Palo Alto, CA, November, 1984.

An important objective of the experiment is to test the program in a variety of school environments, thus providing evidence about the program's effectiveness that is generalizable to a broad spectrum of the school population.

STUDY GOALS AND METHODS

Project ALERT is designed for seventh graders, a group vulnerable to social influences but not yet heavy users of cigarettes or other drugs. It seeks to prevent non-users from experimenting with drugs and experimental or occasional users from making the transition to regular use. Questions the experiment is designed to answer include:

- How well does the social influence model work when applied to substances other than nicotine?
- How well does this approach work across a variety of school environments?
- Does the program prevent both experimental and regular use?
- Is the program equally effective when delivered with and without the assistance of teen leaders?
- What implementation problems arise, and how can they be overcome?

Beginning in the fall of 1984, Project ALERT is being tested in seventh grade classrooms in approximately 30 West Coast schools. The eight experimental districts include urban, suburban and rural communities; the experiment's school population encompasses a range of socioeconomic levels and several ethnic and racial groups. Participating schools, statistically matched to achieve a balance on cigarette and marijuana use plus other variables such as race/ethnicity,

school size, and type of community, have been randomly assigned to one of three groups. Two groups are taught the eight-session Project ALERT curriculum that helps students identify and resist social pressures to use marijuana, tobacco, and other drugs. Older teen leaders assist the health educator in one of these groups; in the second group, the health educator presents the curriculum without the help of teen leaders. A third group will receive no special curriculum but will be tested at the same time as the students participating in the two treatment conditions, thus serving as a control.

All seventh graders in participating schools receive the program assigned to their school. When they reach the eighth grade, students who were taught the seventh grade program will receive two to three "booster" sessions. After that, they will receive no more special training but, if the results warrant it, Rand will continue to monitor their drug use and related behavior throughout the period from the seventh through the tenth grade. We will do this by collecting self-report and physiological data such as saliva samples aimed at detecting drug use.

PRINCIPLES UNDERLYING CURRICULUM DESIGN

Rand's earlier analysis of adolescent drug use patterns concluded that prevention programs should be aimed at an age when the large majority of young people have not yet become entangled in substance abuse and should target one or more of the substances that dominate early use--cigarettes, marijuana and alcohol (Polich, Ellickson, Reuter, and Kahan, 1984). We noted that Denise Kandel's research, which implies that there can be preventive spillover effects from one substance to another, provides a rationale for targeting both legal drugs and

marijuana (Kandel, Kessler, and Margulies, 1978; Yamaguchi and Kandel, 1984a, 1984b). Her work suggests that preventing or delaying the use of legal drugs may prevent or delay illegal substance use; similarly, preventing or delaying marijuana use may block experimentation with cocaine, stimulants, depressants, and other, less prevalent, drugs.

We also pointed out that alcohol differs from cigarettes and marijuana in its widespread social acceptability throughout American society, suggesting that a program based on an explicit or implicit message against any or occasional use of alcohol would lack credibility and effectiveness. For these reasons, we have designed a curriculum for seventh graders that focuses on marijuana and tobacco in the program sessions which implicitly argue against any drug use (sessions one and two), adding alcohol in later exercises specifically aimed at building resistance skills.[1]

Our report also highlighted four factors predisposing adolescents to try drugs: use of specific substances by one's peers and family members; peer and family approval of drug use; the young person's own beliefs about the harmfulness or desirability of using specific drugs; and the adolescent's desire to lay claim to a more adult, independent status by emulating behavior viewed as fostering a more mature and

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[1] We also suggested that alcohol prevention programs might profitably be designed for both younger and older adolescents. Because experimenting with alcohol is considerably more prevalent among seventh graders than is trying cigarettes or marijuana, learning resistance skills at an earlier age might help younger children avoid alcohol. Similarly, programs designed to prevent alcohol-related accidents might help older teenagers at a time when they are most susceptible to pressures to drive while intoxicated or to ride as passengers with an inebriated driver.

sophisticated image.[2] Accordingly, we argued that prevention programs should help young people resist pro-drug arguments and pressures emanating from their social environment, counteract the influence of friends and family members who use drugs with non-using role models, and create or reinforce *group* norms against drug use. Because personal opinions about drugs play a key role in motivating experimental or occasional use, we also argued that prevention programs should help adolescents resist their *own* beliefs that the benefits of drug use outweigh its potential negative consequences.

Model Underlying Curriculum Design

Like its anti-smoking predecessors, the Project ALERT curriculum seeks to accomplish its prevention goals by teaching young people to identify and resist social pressures to use drugs. Curriculum features unique to Project ALERT include:

- its derivation from a general model of resistance behavior that stresses *motivation* to resist as well as resistance skills;
- its integration of elements from the Health Belief Model, social learning theory, and the self-efficacy approach to behavior change into an overall strategy that has guided the design of each curriculum session and activity; and
- its effort to help young people counter *internal*, as well as external, pressures to use drugs.

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[2] These factors emerge in the work of several researchers, among them Gersick, et al, 1981; Huba, Wingard and Bentler, 1979, 1980; Jessor, Chase and Donovan, 1980; Jessor, Donovan, and Widmer 1980; Yamaguchi and Kandel, 1984b; Kandel, Kessler, and Margulies, 1978; and Sherman, et al, 1983.

Underlying our entire prevention approach is the following model of successful resistance behavior:

$$y = \alpha + \beta'x + \gamma'z + x'\delta z$$

where:

y = resisting drug use

x = motivation to resist

z = skills to resist.

As this equation indicates, we view successful resistance as a function of two factors: (1) the motivation to resist; and (2) the ability to translate that motivation into resistance behavior. Providing motivation without the skills to put resistance into practice is unlikely to help adolescents who are just beginning to make their own decisions at a time when they are also particularly vulnerable to peer pressure. Similarly, being able to say no to oneself or others is unlikely to be translated into reality if the adolescent views taking drugs as desirable.

The model also views the interaction between motivation and resistance skills as very important: being motivated to resist can enhance the speed and quality of skill learning, while having the ability to say "no" can help increase one's motivation to do so. Throughout the curriculum, this concept manifests itself in the degree to which specific activities link both motivational and skill-building objectives. Thus when students discuss the effects of using marijuana, they are learning *why* not to use it as well as *how* to counter pro-drug arguments.

Increasing Motivation to Resist

In translating this general model into reality, we treat motivation as a function of both the perceived costs and benefits of using drugs and the perceived costs and benefits of resistance. Thus, we explicitly incorporate a cognitive approach to behavior change in the curriculum, integrating elements of the Health Belief Model and Bandura's work on resistance self-efficacy into the following strategies designed to enhance the student's motivation to avoid drug use: [3]

- o increasing the student's sense of the *seriousness* of drug use;
- o increasing the student's perceived *susceptibility* to the consequences of using drugs;
- o decreasing the perceived *barriers* to resistance, including the belief that resistance will not work or cannot be successfully carried out; and
- o increasing the perceived *benefits* of resistance.

Enhancing Seriousness and Susceptibility. These concepts are addressed in the first two program sessions, which stress the social, psychological and physical consequences of drug use. Because adolescents frequently discount the probability of actually experiencing long-term effects that may take several years to develop (heart disease, lung cancer, damage to other organs), the curriculum emphasizes consequences that are particularly salient to teenagers; e.g., the immediate effects of cigarette smoking on one's personal attractiveness

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[3] For an expanded discussion of the Health Belief Model, see Rosenstock, 1974. Bandura's self-efficacy theory of behavior change is described in Bandura (1977b) and Bandura and Adams (1977).

and of marijuana use on the ability to communicate, remember, and control one's actions. These consequences emerge out of student discussions--activities that ask them to articulate the reasons why people do and do not use drugs and to trace what happens "after you smoke a cigarette or marijuana joint the first time, after you've smoked a while (regularly at parties) and after you've smoked a long time (several years)." The discussions are supplemented by posters depicting the short- and long-term effects of using tobacco and marijuana, several informational pamphlets about drugs, and two original films--one in which teenagers discuss the pros and cons of using marijuana and one dramatizing the effects of using pot at a party.[4]

Decreasing Barriers to Resistance. To decrease barriers to resistance, we encourage students to question the widespread belief that resistance is rare and seldom successful. Student estimates of the proportion of drug users in their school district are countered with actual statistics showing that only a minority actually smoke cigarettes or marijuana. In addition, the health educator and teen leaders provide personal examples of effective resistance, while alternative ways to say "no" successfully are depicted on film. Providing the program to the entire seventh grade also helps create an environment in which resistance, rather than taking drugs, is both socially supported and viewed as the norm.

Enhancing Resistance Benefits. Because resistance often requires *inaction* rather than action, adolescents rarely think about, much less verbalize, its benefits. We seek to make such rewards more salient by

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[4] For more details on the activities included in each program session, see Ellickson (1984).

explicitly asking students to write down all "the good things you get" from resisting pressures to use drugs. Seventh graders typically conceptualize these benefits as the reverse form of negative consequences (improved vs. impaired performance, white vs. yellow teeth, being able to remember vs. loss of short-term memory). Thus the exercise reminds them of the costs of drug use and their own vulnerability to these costs.

We also encourage students to write down benefits derived from the act of resistance itself--the sense of personal satisfaction and improved self-image associated with being able to say "no," increased respect from one's peers and/or family, and the feeling of being in control of one's actions. The rapidity with which these benefits can be realized has special appeal for present-oriented adolescents who respond to immediate, as opposed to delayed, gratification.

Building Resistance Skills

The heart of the curriculum involves teaching specific resistance skills--the ability to identify pressures to use drugs, to provide counterarguments to pro-drug messages, and to say "no" gracefully. Unlike earlier programs, we explicitly address the fact that social pressures can be internal as well as external--manifested by the subtle internal belief that using drugs will help one be accepted or look "cool" as well as the direct challenge to try a cigarette or marijuana joint at a party. Students identify and counter specific pressure messages from themselves as well as from friends, parents, and the media; point out the subtle and not so subtle ways in which advertisers try to convince them to smoke or drink; rewrite ads to tell the "real truth" about cigarettes or alcohol; and practice saying no to specific

internal and external pressures posed in trigger films, their own original skits, and written scenarios.

Each of these activities is designed to increase resistance self-efficacy or "the conviction that one can successfully execute the behavior required to produce the [specific] outcome" (Bandura, 1977b, p. 193). Each incorporates the following principles derived from Bandura's work on social learning and behavior change (Bandura, 1977a; 1977b):

- o specifying proximal, discrete goals;
- o learning through active involvement (participation and practice);
- o modeling one's behavior on that of admired others; and
- o enhancing motivation and perceived success through reinforcement and validation.

Proximal Goals. In an experimental study designed to improve children's mathematical abilities and intrinsic interest in the subject, Bandura and Schunk (1981) found that children in the program specifying proximal goals exhibited the largest gains in mathematical skills, interest and self-efficacy. Our aims are similar: To build resistance motivation and skills, with particular emphasis on resistance self-efficacy as an important motivational factor. Hence we divide each program session into discrete "skill chunks," with proximal goals for each chunk that are explicitly communicated to the students: "Today we're going to learn how to identify pressures to use drugs that come from inside ourselves" or "Now we'll learn how to say 'no' when someone offers us pot."

Active Involvement. Active involvement, rather than didactic teaching, is stressed throughout the curriculum, reflecting our belief that adolescents are much more likely to learn new material and skills when they actively participate in the learning process. Following Bandura, we give particular emphasis to activities that elicit performance of resistance behavior. For example, we have produced two "trigger" films that set up a realistic dilemma in which the hero or heroine is offered a specific drug. The films stop when the offer is made, and the students, who form into several groups, are instructed to devise and act out a successful "saying no" solution. After they have produced their own endings, we show them three filmed solutions--each depicting a different way to say "no."

Invariably the students have anticipated one or more of the filmed solutions, thereby validating their own performance while also allowing the health educator to stress that there are several ways to resist. If one does not feel appropriate or comfortable in a specific situation, perhaps another will. Other resistance exercises elicit individual responses (both written and verbal) to internal and external pressure scenarios. Through repeated "saying no" practice, we seek to help students become comfortable with a repertoire of responses they can call upon when faced with a situation that tempts them to use drugs.

Modeling. Several of these participatory learning modes facilitate modeling, learning new behaviors by observing (and later copying) the behavior of admired others. As individual students role play different ways to say "no," the rest of the class observes a successful technique they can emulate in the future; similarly, the

health educator, as well as the "live" and filmed teen leaders, provide credible models of effective resistance.

We enhance role model credibility by selecting teen leaders who appeal to a variety of student groups, maximizing ethnic and racial diversity where appropriate and balancing teen leader "images" (athletic, social, student leader, fringe, etc.). Role model credibility is also strengthened by the classroom behavior of both the health educators and the teen leaders. Encouraged to respect the students and to legitimize their right to make their own decisions, the teens and health educators strive to create an environment in which students feel important and reinforced for participating in session activities. We have found that students typically respond to a facilitative environment by identifying more closely with both the adult and the older peer leaders.

Reinforcement and Validation. Finally, the curriculum stresses reinforcement and validation (verbal persuasion) as a key aspect of the delivery process. Because the program elicits responses from the students rather than presenting a pre-fabricated menu of "do's and don't's," there are numerous opportunities for this to occur. Both the health educators and the teen leaders practice several reinforcement (or validation) techniques during training--for example, praising students for specific contributions, listening attentively, repeating student responses or "saying no" solutions, elaborating a point, and recalling how a subsequent discussion relates to earlier remarks. While they are encouraged to use the techniques that feel most comfortable to them, the curriculum itself builds in several of these methods (writing student responses on the board, showing filmed solutions that reinforce prior

student performance, exhibiting posters that recapitulate student examples of drug use consequences). We place particular emphasis on statements that convey the conviction that students are mastering resistance skills and will be able to use them "to avoid doing things they don't want to do" in the real world.

SUMMARY

The specific content of the Project ALERT curriculum focuses on countering the primary influences that promote adolescent initiation into drug use (use by peers and significant others, beliefs that drug use is widespread and acceptable, and beliefs that using drugs enhances one's image as mature, independent, and attractive to others). That content, rooted in a clear understanding of why adolescents start using drugs, is adapted to the young teenager's developmental capacities--his limited ability to personalize the linkage between current behavior and long-term events as well as his tendency to overestimate drug usage in his own environment.

Integrated into an overall model of the factors that promote resistance behavior, the principles underlying the curriculum represent a unique synthesis of the Health Belief Model of prevention, social learning theory, and the self-efficacy approach to behavior change. They can be summarized as follows:

- o foster *both* the motivation to resist and the acquisition of resistance skills;
- o enhance motivation by increasing perceived seriousness and personal susceptibility to undesirable drug-use consequences; lowering barriers to resistance; and emphasizing the perceived benefits of resistance;

- o build resistance skills by presenting proximal, discrete goals; maximizing participation and practice; offering credible role models; and reinforcing successful student performance.

To date, we have successfully implemented Project ALERT in twelve schools from four districts in California and Oregon. We plan to field the program in eighteen additional schools during the spring of 1985 and to report how well the program has worked three, twelve and fifteen months after baseline data collection. If those results look promising, successive reports will discuss whether the effects persist as the seventh grade cohort makes the transition to high school.

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